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What is that? There are differing schools or codes of ethics both in theory and practice, and the only sense that the term 'practical' can be used in relation to ethics is that it may designate the kind of ethics in practice in the time and place in question. This in our country and time, and special field involved, is the ruling order of political economy. This is the practised one as opposed to the professed one, which is Christian, and most decidedly different from the former.

He defends this questionable position with equally questionable figures. There are no 'official' figures compiled by any such men as our practical politicians (especially in matters where they may be assumed to be interested) which any scientific man would accept as evidence to controvert the constancy of the order of nature. The assumption that contractors would hire convicts in trades which are plentifully manned by free laborers, except for the one reason, greater cheapness, involves just such an infraction in the order of nature as is expressed in the commonplace reference to water running up hill.

But even so, says Mr. Butler, the total proportion of convict labor to free is only 1.1 per cent. "And it is this minute percentage of competition that has caused all the hue and cry against convict labor."

This is a peculiarly misleading way of 'treating' the figures. The pressure of convict competition has been felt in certain trades of certain localities, such as shoe and hat making of the state of New York. There the percentage has been large enough to injure both employers and employed, and, if Mr. Butler wishes to show the causelessness of the 'hue and cry,' he ought to show the percentage in special trades and localities. A shoemaker does not compete with a tinsmith, nor does the purely local trade of one locality interfere with that of another.

It is true, however, that even the unaffected trades have taken up the 'hue and cry;' and that is because their ethics differ from the 'ruling school,' where the principle, 'every one for himself,' is held, and instead of that their ethical doctrine is, 'an injury to one is the concern of all.'

E. LANGERFELD.

Amongst a number of inferences, the above communication contains one statement, and that not bearing on the question of the general merits of the contract system, but on its application to the hat and shoe trades in the state of New York. Whether any modification of the system in this point of its application is advisable, experience must determine; perhaps a restriction as to the number of convicts to be employed in any one industry would be desirable.

The official figures as far as these two industries are concerned are as follows. In 1879, 320 convicts were employed in making hats in the state of New York, while 5,267 free workmen were engaged in the same industry; thus the competitive force of the convict labor was about 4 per cent. In 1879, 1,927 convicts — 1,885 males and 42 females — were employed in New York prisons (at Sing Sing, Auburn, and Clinton prisons, at the penitentiaries at Albany, Brooklyn, Rochester, and Blackwell's Island, and at the western house of refuge at Rochester) in the manufacture of boots and shoes. According to the census of 1880, 26,261 is the number of free laborers at boot and shoe making in New York state. This shows the competitive force of the convicts' labor in this instance to be something over 4 per cent. This amount is still small, though considerably greater than the figure (1.1) which we found to represent the competitive force of all the convict labor in the United States, without regard to particular industries.

Your correspondent has selected that example in which competition is greatest, but even then 4 per cent is the highest figure reached, and surely it is not so very formidable. I have had some hesitation in adducing fresh figures, for fear that they may be summarily rejected as useless, because they do not fit in with some person's ideas as to how the 'course of nature' ought to go.

NICHOLAS MURRAY BUTLER.

The festoon cloud.

I have been much interested in the recent articles in *Science* on festoon clouds. In August, 1884, I witnessed a remarkable exhibition of this description over Vineyard Sound, between the shoulder of Cape Cod and Martha's Vineyard. It was in the morning, about nine or ten o'clock. The sky was overcast with clouds betokening a shower. A thunder-cloud was in the north-west, from which occasional mutterings were heard. High over the water was a dark cloud, from which depended portions of the cloud like great curtains. These depending portions grew lighter in color, and thinner in texture, until, when within about one hundred feet from the water, they frayed out into a fringe-like appearance. Between these curtains the atmosphere was comparatively clear, up to the dark cloud above; but, as the depending portions approached the dark cloud, they grew in dimension and density, forming arches from one to the other. The dark cloud extended south-west and north-east in the direction of the axis of Vineyard Sound, but the depending clouds were at right angles to this direction. I secured a sailboat, and sailed underneath these clouds, and the display was truly wonderful. The fringing of the lower portion of the depending clouds was very beautiful, and the high arches between were impressive. This exhibition was followed by a severe thunder-storm, as I remember. There seemed to be currents of air of different temperatures, but, in the absence of instruments, I was unable to make any record of this. I recall that the wind was unsteady and shifting at the surface, which required careful management of the boat.

J. M. ALLEN.

Hartford, Conn., Feb. 6.

Correction of thermometers for pressure.

Imperfect instruments, faulty methods, and personal errors have caused the introduction of a great many inaccuracies in scientific literature, and entailed great labor in their correction and the repetition of experiments. This is especially true in the case of physical constants. It is manifest that in this work of redetermination the most painstaking accuracy should be aimed at, and every possible source of error avoided. Otherwise the work must be repeated at some future day, and our theories based upon uncertain constants will have but little force.

It occurred to one of us (Dr. Venable) that a source of error in thermometric readings, not generally corrected for, might lie in the effect of pressure upon the glass bulb containing the mercury. No reference to any such corrections could be found in the books at our command, and we resorted to experiment to test the amount of the possible error.

A few experiments, carried out with some fine

Geissler thermometers, showed for a spherical bulb an increase of 0.16, and for a cylindrical bulb an increase of 0.27, of a degree Fahrenheit, for an additional atmosphere of pressure. Clearly, the amount of increase will depend upon the nature of the glass bulb, its thickness, size, and shape.

Many observations on vapor-pressure, on boiling-points under increased or diminished pressure, meteorological observations at unusually high stations or in mines, are subject to this correction; and, as no general correction will be satisfactory, each thermometer will have to be separately tested.

We have written to the signal-service bureau for information on this subject, and find that they 'have the matter under consideration,' and are making experiments. Besides, we have been referred to papers by Loewy in Proceedings of the Royal society, 1869, and by Marck, International bureau of weights and measures.

We write now to point out this source of error to readers of *Science* who may not have noticed it, and to ask if any can refer us to further memoirs and observations on the subject.

F. P. VENABLE.
J. W. GORE.

University of North Carolina, Jan. 23.

Is the dodo an extinct bird?

Since the publication of an article of mine upon the origin of birds, which appeared in the *Century magazine* for January, 1886, there have come to me a number of interesting letters questioning the fact that the dodo is entirely extinct. From among them I select one recently received from Dr. William Barr of Bovina, Miss. My correspondent tells me that he clipped not long ago, from an English newspaper, the following item: "Mr. Manley Hopkins, consul-general of Hawaii, writes to an English journal, 'By my papers received from Hawaii, I observe that among some birds brought by the schooner Fanny from the Samoan group was a single specimen of that *rara avis in terra*, the dodo. I am sure your readers will be interested to hear that this bird, supposed to have become extinct more than a century ago, still lingers in the little-explored Samoan Islands of the South Pacific.'"

A number of continental naturalists, who, no doubt, have arrived at their opinions through the rumors brought home by explorers, have predicted that the dodo will some day be found to be one of the forms of the existing avifauna of the island of Madagascar.

R. W. SHUFELDT.

Fort Wingate, N. Mex., Jan. 20.

Evidences of glacial action on the shores of Lake Superior.

Evidences of glacial action are abundant about Peninsula Harbor, on the north shore of Lake Superior. The tops of the low islands, and of the hills along the shore, are rounded in a striking manner. Below the surface of the water well-preserved grooves and scratches extend in a general north-east and south-west direction. The crevices in the granite rock which extend across the glacial markings have their northerly sides nearly intact, while the sides opposite are considerably worn. Where the crevice extends in about the same direction as the glacial mark, both of its sides are gouged out.

On Verte Island, Nipígon Bay, Lake Superior, a well-preserved beach of water-worn pebbles lies, as near as could be determined by rough measurement, two hundred and eighty feet above the present level of the bay.

A. A. CROZIER.

Grand Rapids, Mich., Jan. 26.

Professor Newcomb's address before the American society for psychical research.

In view of the utterances in the last two numbers of *Science*, called forth by my address before the American society for psychical research, some comment by me may not be inappropriate.

Of the two criticisms upon my address, which are put forth in the comments of Jan. 22, one seems to me well founded. It is that directed against my definition of thought-transferrence as something which is supposed to take place without any physical connection between the acting and the percipient minds. *Science* correctly points out that the absence of a physical medium of transfer is not implied in the doctrine of transferrence. But, while conceding this, I wish to point out that this error no more affects my conclusions than a typographical error would. The point to which my whole discourse was actually directed was that of thought-transferrence through any hitherto unrecognized channel, whether material or not. In other words, I inquired whether the observed phenomena required the admission of any new law of nature in order to explain them.

Your other criticism is in these words: "He places much emphasis, for instance, on the extreme rarity of thought-transferrence in the ordinary course of life, and implies, somewhat sarcastically, that it ought to be much more frequent."

I can find in my written paper no justification for any such remark, and cannot even guess what passage it refers to. I did, indeed, point out the well-known and obvious fact that very rare phenomena become frequent when we learn how they are produced, or how they may be observed, and remarked, that, were thought-transferrence real, we should expect to learn how to produce it at pleasure as its conditions became better known. The great fact which I pointed out is this: after three years of painstaking labor by the English society, and one year of our own, no one shows us how to produce or observe thought-transferrence, nor indeed tells us any thing about it that we did not know before.

Professor James's remarks in *Science* of Feb. 5, are directed mainly to certain reflections upon the English society, for which I am not responsible to any further extent than as having made the remark which led to them. At the same time the question seems to me not devoid of interest. The ground which I take is, that the parts of the reproduced figures made by blindfolded percipients fit together in a way which could scarcely have been possible unless the percipient either saw the drawing he was making or had a knowledge of his work by some agency unknown to science. Professor James is not ready to concede this, but apparently claims that the muscular sense would have proved a sufficient guide, and suggests that I try the experiment myself. I beg leave to assure him that I did not venture on my conclusions until I had tried it. I cannot make any such drawings as those given on pp. 89 and 95 of the Proceedings of the English society by the muscular